

CHEMICAL COMPOSITION OF THE ESSENTIAL OIL OF *Lavandula angustifolia* FROM XINJIANG, CHINA

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The genus *Lavandula* (Labiatae), consisting of about 28 species, is widely distributed in the archipelagoes of the Atlantic Ocean and the Mediterranean. In China, there are only 2 species, *Lavandula angustifolia* Mill. and *L. latifolia* Vil, mainly growing in Xinjiang. Essential oils and plant extracts derived from the genus *Lavandula* have been used therapeutically for centuries and there are some reports on the biological activities of Lavender essential oil [1, 2]. In Xinjiang, *L. angustifolia* has also been used in traditional Uygur medicines for the treatment of ulcer, scald, nerve ache, dermatosis, and rheumatism [3, 4]. In addition, the essential oil of Lavender is important for the perfume, cosmetic, flavoring, and pharmaceutical industries. As the major Lavender resources for medical uses in China, there are few reports on the essential oil of *L. angustifolia*.

We identified a total of 17 compounds in the hydrodistilled oil of *L. angustifolia* from Xinjiang, China, with linalool (44.54%), geraniol (11.02%), lavandul acetate (10.78%), 3,7-dimethyl-2,6-octadien-1-ol (10.35%), and isoterpineol (6.75%) as the main components (Table 1).

The GC/MS analysis was performed on a combined GC/MS instrument (VARIAN CP-3800 /SATURN 2000) using a DB-5 fused silica capillary column (30 m length, 0.25 mm diameter, 0.25 mm film thickness). A 0.5 μ L aliquot of oil was injected into the column using a 50:1 split injection, with the temperature set at 250°C. The GC program was initiated by a column temperature set at 80°C for 2 min, increased to 220°C at a rate of 3°C/min, and held for 10 min. Helium was used as the carrier gas (1.0 mL/min). The mass spectrometer was operated in the 70 eV EI mode with scanning from m/z 40–600, and the mass source was set at 200°C.

Identification of components was done by comparison of the GC retention indices and computer matching of their mass spectral fragmentation patterns with the NIST-MS database.

TABLE 1. Composition of the Essential Oil of *Lavandula angustifolia*

Compound	%	Compound	%	Compound	%
1-Octen-3-ol	0.35	Linalool	44.54	Geraniol	11.02
3-Carene	0.45	(<i>E</i>)-4,8-Dimethyl-3,8-octadiol	1.45	Lavandul acetate	10.78
1-Methyl-2-ethylbenzene	0.11	Camphene	3.98	3,7-Dimethyl-2,6-octadien-1-ol	10.35
Limonene	0.19	Borneol	2.45	Caryophyllene	0.50
Eucalyptol	2.30	Isoterpineol	6.75	Cadiol	0.15
Ocimene	0.52	Myrcene	0.87		

REFERENCES

1. H. M. A. Cavanagh and J. M. Wilkinson, *Phytother Res*, **16**, 301 (2002).
2. T. Moon, J. M. Wilkinson, and H. M. A. Cavanagh, *Parasitol Res.*, **99**, 722 (2006).
3. Y. M. Liu, *Uygur Materia Medica*, M., 905 (1999).
4. Editorial Office of Health Bureau of Xinjiang Uygur Autonomous Region, *Standard of Uygur Materia Medica*, S, 394 (1993).

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